**Draft Minntac Compliance Schedule**

1. **Compliance Schedule**

**1.1** To mitigate impacts from the Tailings Basin discharge to groundwater (SDS Compliance Schedule), the Permittee shall meet the following limits in the shortest reasonable period of time, but in no event later than the following times, unless the Permittee establishes through the investigation required under Part 2 below (Hydrological Investigation Work Plan) and/or Part 3 below (Basin Treatment Methods Study Plan) and other reliable data that other limits will result in compliance with the applicable water quality standards at all waters shown to be affected by pollutants released from the Tailings Basin or that other deadlines are necessary, and this permit has been amended to reflect those limits and/or deadlines:

a) 357 mg/L sulfate within the tailings basin pool water no later than ten years after permit issuance; and

b) 250 mg/L sulfate in the groundwater at the property boundary by December 31, 2025. [Minn. R. 7001]

**1.2** For the discharge of seepage to surface water along the tailings basin dam perimeter, the Permittee shall meet the terms of the NPDES compliance schedule (detailed below in part 7.1) as soon as possible, but not later than 18 months after permit issuance. [Minn. R. 7001]

1. **Hydrological Investigation Work Plan. [Minn. R. 7001]**

**2.1** Within 180 days after permit issuance, the Permittee must submit a Hydrological Investigation Work Plan that describes how the Permittee proposes to investigate and evaluate site conditions critical to the selection and implementation of treatment, mitigation efforts and/or other activities that could be taken to meet all applicable water quality standards and support designated uses in waters of the state that are impacted by pollutants from the Basin. submit a plan : Due by 180 days after permit issuance. [Minn. R. 7001]

**2.2** The Hydrological Investigation Work Plan shall include a field data collection and analysis plan sufficient to accomplish the following:

a) identify the significant surface and subsurface flow paths from the tailings basin to surrounding surface waters and groundwater under existing and foreseeable hydrologic conditions at the tailings basin;

b) evaluate water quality with respect to all applicable uses potentially impacted by the tailings basin along the identified flow paths;

c) determine potential aggregate acute and chronic toxic effects to aquatic organisms at compliance locations (identified in this permit) in the Sand River and Dark River watersheds;

d) develop an understanding of the fate and transport of tailings basin-derived chemical constituents at a level sufficient to assess the effectiveness of considered mitigation technologies and strategies, including calculated estimates of the recirculated tailings basin pool water sulfate concentration necessary to meet applicable water quality standards and support designated uses in surface water and groundwater;

e) determine sources and potential quantities of pollutants released from each source in the basin, including sources such as coarse tails, fine tails, recirculating process water, air emissions control contributions, and tailings lock-up water (pore water); and,

f) identify and quantify any other pollutants the Permittee could reasonably expect to be released from the tailings basin, taking into account contributions from tailings lock-up water, continued oxidation of emplaced tails, and secondary pollutants that could be released or re-mobilized, and estimate the timeframe over which the tailings basin will continue to release pollutants. [Minn. R. 7001]

**2.3** The Hydrological Investigation Work Plan shall also include a field data collection and analysis plan sufficient to develop a site conceptual flow and transport model(s) that describes the sources, fate, and transport of tailings basin pollutants sufficiently for the purpose of estimating future hydrogeological and water quality conditions at the tailings basin and along the flowpaths identified for 2.2(a) during basin operation, and post closure, and which will allow the Permittee to evaluate the effectiveness of potential passive and/or active treatment technologies, mitigation alternatives or combinations of actions, with regard to meeting all applicable water quality standards and supporting designated uses in waters of the state that are impacted by pollutants from the Basin. The conceptual flow and transport model(s) shall provide a system mass balance that accounts for the transport or transformation of parameters of concern to within plus or minus ten percent of the mass calculated to be emanating from the tailings basin, as well as estimates for pollutant travel times along identified flow paths. [Minn. R. 7001]

**2.4** The Permittee must also comply with the following interim requirements before submitting its final plan. Within 90 days after permit issuance, the Permittee must submit to the MPCA a status report identifying:

a) All waters of the state that are believed to be impacted by pollutants from the Basin;

b) All waters of the state within a 2 mile radius of the Basin perimeter that the Permittee contends are not impacted by pollutants from the Basin and detailing the reasons the Permittee contends those waters are not impacted by pollutants from the Basin; and

c) A preliminary list of locations where field investigation monitoring activities are planned. submit a report : Due by 90 days after permit issuance. [Minn. R. 7001]

**2.5** The Permittee shall complete the actions listed in the Hydrological Investigation Work Plan within 18 months of permit issuance. [Minn. R. 7001]

**2.6** Upon submittal of the Hydrological Investigation Work Plan and schedule, the Permittee shall commence work on the Plan in accordance with the schedule contained therein and provide written notice to the MPCA that it has commenced work and thereafter report to the MPCA on its progress as required by part 5.28.37 (reports). The MPCA reserves the right to submit comments to the Permittee on the adequacy of the Investigation Work Plan. If the Permittee does not address comments submitted by the MPCA to the satisfaction of the MPCA, the MPCA reserves the right to determine that the results do not provide adequate scientific support for any proposed change in the schedule of compliance limits. [Minn. R. 7001]

**2.7** Following submittal of its Investigation Work Plan, the Permittee must provide a status report every 90 days identifying, at a minimum, the following:

a) The work conducted in the last 90 days;

b) Any reports prepared by the Permittee, or its consultants, related to the work performed;

c) Milestones to be met before the next 90 day status report and work the Permittee intends to perform to meet those milestones. [Minn. R. 7001]

**2.8** A final report documenting the findings of the fully implemented Hydrological Investigation Work Plan shall be submitted within 18 months of permit issuance. The report shall include all of the information and analyses described in Parts 2.2 and the site conceptual flow and transport model described in 2.3. submit a report : Due 548 calendar days after Permit Issuance Date. [Minn. R. 7001]

**2.9** Failure to complete the Investigation Work Plan and submit the required report within 18 months of permit issuance will not extend the deadline for the Basin Treatment Methods Study Plan. [Minn. R. 7001]

1. **Basin Treatment Methods Study Plan. [Minn. R. 7001]**

**3.1** Within 20 months of permit issuance, the Permittee shall submit a Basin Treatment Methods Study Plan that identifies feasible technologies (including at a minimum, nano-filtration, reverse osmosis, ion exchange, and dry emissions controls), for non-mechanical or mechanical treatment/mitigation to reduce the concentration of sulfate as required under part 1.1 above. submit a report : Due 610 calendar days after Permit Issuance Date. [Minn. R. 7001]

**3.2** The Basin Treatment Methods Study Plan must identify how the Permittee will evaluate the treatment methods to determine which method will reduce surface water and groundwater quality impacts from the tailings basin in the shortest reasonable period of time, considering the reliability of the treatment methods, the cost to install and to operate the treatment methods, compatibility with MDNR closure requirements, and the secondary environmental impacts of the treatment methods, if any. [Minn. R. 7001]

**3.3** The Basin Treatment Methods Study Plan must include a detailed schedule that justifies the time period proposed to complete the technical feasibility analysis. [Minn. R. 7001]

**3.4** The Basin Treatment Methods Study Plan must be of sufficient scope to provide for the following, which shall be detailed in the Final Compliance Plan described in Part 4.2:

a) a description of each possible treatment method that the Permittee has identified, an analysis of the technical feasibility of each method, and the estimated cost to install or implement each method;

b) an estimate of the length of time that each technology/treatment method would require to attain and maintain compliance with a basin sulfate concentration identified in Part 1.1(a);

c) an estimate of operation and maintenance costs associated with each treatment method and the reliability of that method;

d) analysis of how each identified potential passive and/or active treatment method may impact site closure in accordance with MDNR requirements, which include a dry basin;

e) identification of secondary environmental impacts and costs for each method;

f) whether mitigation adjacent to the basin will be necessary, in addition to basin water treatment, to meet all applicable water quality standards and supported designated uses for the waters of the state that are impacted by pollutants from the Basin, including any water quality standards and supported designated uses identified by the MPCA, in the shortest reasonable period of time. [Minn. R. 7001]

**3.5** All tasks described under the Basin Treatment Methods Study Plan must be completed within 29 months of permit issuance. The plan provides the basis for the Permittee to submit the Final Compliance Plan described in Part 4.2 below. [Minn. R. 7001]

**3.6** Upon submittal of the Basin Treatment Methods Study Plan and schedule, the Permittee shall initiate the plan of action identified in the Plan in accordance with the schedule contained therein, and provide written notice to the MPCA that it has done so within 14 days. [Minn. R. 7001]

**3.7** The MPCA reserves the right to submit comments to the Permittee on the adequacy of the Basin Treatment Methods Study Plan and schedule. If the Permittee does not address comments submitted by the MPCA to the satisfaction of the MPCA, the MPCA reserves the right to determine that the results do not provide adequate scientific support for a change in the schedule of compliance limits. [Minn. R. 7001]

**3.8** If the Permittee proposes an alternative final basin concentration, the Permittee must submit an application to modify the permit. To be approved, the Permittee must demonstrate scientific support for the ability of the alternative to meet applicable water quality standards in all water bodies identified as being affected or potentially affected by water released from the Tailings Basin as demonstrated in the Hydrological Investigation Work Plan. [Minn. R. 7001]

1. **Final Compliance Plan. [Minn. R. 7001]**

**4.1** Within 30 months of permit issuance, or within 60 days of MPCA's approval or denial of a permit amendment, if requested, the Permittee shall submit a Final Compliance Plan. submit a compliance plan : Due by 2.5 years after permit issuance. [Minn. R. 7001]

**4.2** The Final Compliance Plan shall include the following:

a) the findings of the Hydrological Investigation and Basin Treatment Methods Study, including an estimate of how quickly the identified potential passive and/or active treatment technologies, mitigation alternatives or combinations of actions will reduce the basin sulfate concentration to 357 mg/L, or an alternative concentration if the permit has been amended to include an alternative concentration.

b) an explanation of why the technology/treatment method(s) selected represent the best means of meeting final compliance limits. Factors to be considered the best technology/treatment method(s) include rate of reduction of sulfate concentration, reliability, feasibility, compatibility with the approved basin closure plan, and limitation of secondary environmental impacts that will not be mitigated;

c) an estimate of operation and maintenance costs associated with treatment/mitigation to maintain compliance with applicable water quality standards and support designated uses in surface water and groundwater;

d) an estimate of the length of time that active treatment or maintenance of passive systems would be required to maintain compliance with applicable water quality standards and support designated uses in surface water and groundwater (pre and post closure);

e) a predicted timeline, based on information collected under the Investigation Work Plan, for when the reduction of pollutant load to the watershed will be first observed at the monitoring stations;

f) analysis of how the identified potential passive and/or active treatment technologies, mitigation alternatives or combinations of actions may impact site closure in accordance with MDNR requirements, which include a dry basin;

g) a detailed proposal identifying the specific treatment systems and/or mitigation that will be implemented to achieve compliance with final permit limits and applicable water quality standards, including basin sulfate concentration limits, in the shortest reasonable period of time;

h) the design, site plan, process schematic(s), preliminary design and specifications for major components of the specific treatment systems, and/or mitigation to be implemented;

i) a schedule that will incorporate any pilot testing, (which must be completed by month 42), if necessary, to finalize the design process; and

j) a schedule for attaining any necessary permits in the shortest reasonable period of time. [Minn. R. 7001]

1. **Final Plans and Specifications. [Minn. R. 7001]**

**5.1** Within 48 months of permit issuance, the Permittee shall submit to MPCA:

a) a final design package, which includes plans and specifications for treatment or mitigation system components, including specifications based on any pilot testing conducted that are sufficient to submit complete and accurate applications for any permits that may be required;

b) a monitoring plan that will allow quantifiable biannual assessment of the performance of the treatment system and/or mitigation relative to its ability to achieve compliance with final limits, as well as applicable surface water and groundwater water quality standards by the specified date;

c) a detailed schedule of milestones, occurring at intervals of annually or less, which include, at a minimum, start of construction, completion of construction, start-up, and initiation of operation, with adequate justification for the timeline described in the schedule meeting the shortest reasonable period of time requirement. Upon submittal, the milestone deadlines will become fully enforceable commitments of this compliance schedule, and failure to achieve these commitments will constitute a permit violation enforceable by MPCA; and

d) predictions of the dates applicable water quality standards and designated uses will be met at each surface water monitoring station as a result of proposed mitigation efforts. submit final technical documents : Due by four years after permit issuance. [Minn. R. 7001]

1. **SDS Schedule for Deep Seepage - System Implementation or Construction. [Minn. R. 7001]**

**6.1** The Permittee shall initiate construction or begin implementation of the chosen treatment system and/or mitigation within the shortest reasonable period of time, but no later than 54 months after permit issuance. begin construction : Due 1644 calendar days after Permit Issuance Date. [Minn. R. 7001]

1. **NPDES Schedule - Dark River Seepage Collection and Return System (SCRS). [Minn. R. 7001]**

**7.1** The Permittee shall implement a system for recapture of seepage affecting shallow groundwater and surface waters ("SCRS") on the west side of the Tailings Basin within 18 months of permit issuance. The Permittee is responsible for obtaining all necessary approvals (U.S. Army Corps of Engineers, Wetland Conservation Act) to implement the SCRS system by submitting timely and complete applications. The MPCA will not grant any extensions to this deadline if the Permittee fails to submit timely and complete applications for necessary approvals. The Permittee shall provide copies to the MPCA of all applications filed and correspondence submitted to other agencies, which must approve the SCRS system. complete construction and commence operation : Due 548 calendar days after Permit Issuance Date. [Minn. R. 7001]

1. **Special Requirements (Applicable to NPDES and SDS Schedules of Compliance). [Minn. R. 7001]**

**8.1** To ensure timely submittal of complete and accurate plans fulfilling all specified requirements, the Permittee shall meet with MPCA three months prior to each plan submittal deadline. At the meeting, the Permittee must present a progress report and draft plan that includes all the components of the plan as described in this permit and that will attain compliance with permit limits in the shortest reasonable period of time. [Minn. R. 7001]

**8.2** Compliance with permit limits at groundwater monitoring stations shall be deemed to have occurred when all monitoring results at that station are less than or equal to the stated limit for one year of monitoring, and remain at less than or equal to the limit thereafter. [Minn. R. 7001]

**8.3** Compliance with permit limits for the basin sulfate concentration shall be deemed to have occurred when all monitoring results for that station, or other representative basin sampling location, are less than or equal to the stated limit for 6 consecutive months of monitoring, and remain at less than or equal to the limit thereafter. [Minn. R. 7001]

**8.4** If any of the submitted Plan(s) described herein propose actions requiring permits and/or approvals, the Permittee shall submit complete and accurate applications in the shortest reasonable period of time and comply completely and accurately with any requests for additional information in the timeframes specified in the requests. Delays in permit issuance due to incomplete or inaccurate applications will not excuse failure to meet permit deadlines. [Minn. R. 7001]

**8.5** As new information becomes available during the course of the Compliance Schedule that results in material changes to a plan that has been submitted under the Compliance Schedule, the Permittee shall submit revisions to the affected plan consistent with the requirements for plan contents under the terms of this permit. Upon submittal, any such revisions to milestone deadlines shall be incorporated as enforceable provisions into the respective plans, and are enforceable under this permit. [Minn. R. 7001]